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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,150	07/13/2004	Syuji Matsuda	2004_1091A	5201
513 7590 11/27/2007 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			EXAMINER TORRES, JOSEPH D	
			ART UNIT 2112	PAPER NUMBER
			MAIL DATE 11/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/501,150		MATSUDA ET AL.	
	Examiner		Art Unit	
	Joseph D. Torres		2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings were received on 07/13/2004. These drawings are accepted.

Specification

The abstract was received on 11/05/2007. The abstract is accepted.

Information Disclosure Statement

1. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information

or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

The Applicant contends, "With respect to the Information Disclosure Statement filed on September 20, 2004, Applicants note that the Examiner has not considered JP 2002-521789. In this regard, Applicants note that page 3 of the IDS filed on September 20, 2004 clearly indicates that JP 2002-521789 corresponds to WO 00/07300 (which published in English)."

The Examiner disagrees and asserts that WO 00/07300 makes no reference to JP 2002-521789 and since the correspondence between the two documents is not clear, the Examiner has not considered JP 2002-521789.

Claim Objections

2. Claims 18, 19, 23, 24, 28, 29, 33, 34 and 37-40 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 18, 23, 28 and 33 recite elements of a data structure, but do not recite any step for a method or element of an apparatus that further limits respective parent claims.

The Applicant contends that claims 18, 23, 28 and 33 are proper dependant.

The Examiner asserts that claims 18, 23, 28 and 33 for failing to provide and additional limitation in the form of a step/action/function further limiting the method claims from which they depend. By definition, a dependant claim is a claim that adds at least one additional limitation. Since claims 18, 23, 28 and 33 fail to do so, claims 18, 23, 28 and 33 are objected to.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 17-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites new matter, "An error correction method" ... "comprising: a judgment step of judging whether or not a first piece of data, which is one of a plurality of pieces of data elements of the error correction target code, and a second piece of data, which is one of a plurality of pieces of data of a previous error correction code line, were located between the same pieces of sub data before being deinterleaved".

The only error correction method taught in the Applicant's specification is the method of Figure 5. The method in Figure 5 includes only the following judgment steps: S105,

S109, S111, S113, S115 and S116, none of which is a step for “judging whether or not a first piece of data, which is one of a plurality of pieces of data elements of the error correction target code, and a second piece of data, which is one of a plurality of pieces of data of a previous error correction code line, were located between the same pieces of sub data before being deinterleaved”.

The Applicant contends, “With respect to the above-noted feature in claim 17, Applicants note that step S 115 of Fig. 5 and the corresponding description in the specification at page 15, line 19 through page 16, line 10 clearly provides support for such a feature. If the Examiner does not believe that the specification at page 15, line 22 through page 16, line 10 of the specification provides support for the above-noted feature, Applicants kindly request that the Examiner explain why it is believed that such disclosure does not adequately support the above-noted feature.”.

MPEP 608.01(o) requires that the terms used in the claims be found in the specification so that one of ordinary skill in the art can easily determine the scope of the Applicant's claimed invention. Since the Applicant claims that page 15, line 19 through page 16, line 10 clearly provides support for such a feature, and since the claim language (Claim 1 recites new matter, “An error correction method” ... “comprising: a judgment step of judging whether or not a first piece of data, which is one of a plurality of pieces of data elements of the error correction target code, and a second piece of data, which is one of a plurality of pieces of data of a previous error correction code line, were located between the same pieces of sub data before being deinterleaved”) deviates from the language on page 15, line 19 through page 16, line 10, it is up to the Applicant to map

the language from the specification to the language in the claim to show that page 15, line 19 through page 16, line 10 do provide support since there is no antecedent basis in the specification for the language in question.

Claims 22, 27 and 32 recite substantially the same previously recited language as in claim 17, above.

Claim 20 recites new matter, "wherein said judgment step judges that the first piece of data and the second piece of data do not exist between the same pieces of sub data when said first piece of data is directly subsequent to a piece of sub data or a piece of sync data in a data recording order".

The only error correction method taught in the Applicant's specification is the method of Figure 5. The method in Figure 5 includes only the following judgment steps: S105, S109, S111, S113, S115 and S116, none of which is a step for a "judgment step judges that the first piece of data and the second piece of data do not exist between the same pieces of sub data when said first piece of data is directly subsequent to a piece of sub data or a piece of sync data in a data recording order".

The Applicant contends, "MPEP 608.01(o) requires that the terms used in the claims be found in the specification so that one of ordinary skill in the art can easily determine the scope of the Applicant's claimed invention. Since the Applicant claims that page 15, line 19 through page 16, line 10 clearly provides support for such a feature, and since the claim language (Claim 1 recites new matter, "An error correction method" ...

"comprising: a judgment step of judging whether or not a first piece of data, which is one

of a plurality of pieces of data elements of the error correction target code, and a second piece of data, which is one of a plurality of pieces of data of a previous error correction code line, were located between the same pieces of sub data before being deinterleaved") deviates from the language on page 15, line 19 through page 16, line 10, it is up to the Applicant to map the language from the specification to the language in the claim to show that page 15, line 19 through page 16, line 10 do provide support since there is no antecedent basis in the specification for the language in question". MPEP 608.01(o) requires that the terms used in the claims be found in the specification so that one of ordinary skill in the art can easily determine the scope of the Applicant's claimed invention. Since the Applicant claims that page 15, line 19 through page 16, line 10 clearly provides support for such a feature, and since the claim language deviates from the language on page 15, line 19 through page 16, line 10, it is up to the Applicant to map the language from the specification to the language in the claim to show that page 15, line 19 through page 16, line 10 do provide support. Claims 25, 30 and 35 recite substantially the same previously recited language as in claim 20, above.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 17-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites, "a plurality of pieces of sub-data", which is indefinite since sub-data can already be considered pieces of a larger data and it is not clear whether "pieces is used to emphasize this fact or whether the sub-data is further divided into smaller pieces.

The Applicant contends, "For example, in the specification, Applicants note that reference is made to "sub-data A" and "sub-data B" as shown in Fig. 4(b). Applicants respectfully submit that one of ordinary skill in the art would clearly understand, based on this description, as well as the remaining description in the specification, that "sub-data A" and "sub-data B", for example, are both considered to be a piece of sub-data, and that the phrase "a plurality of pieces of sub-data" thus merely refers to more than one piece of such data, and does not in any way whatsoever refer to an individual piece of sub-data being divided into smaller pieces".

MPEP 608.01(o) requires that the terms used in the claims be found in the specification so that one of ordinary skill in the art can easily determine the scope of the Applicant's claimed invention. Nowhere does the Applicant use the term "piece" or "pieces" in the specification.

Claims 22, 27 and 32 recite substantially the same previously recited language as in claim 17, above.

Claim 18, 23, 27 and 33 recite similar language as in claim 17 and suffer from the same problems as claim 17.

The term "same pieces of sub-data" in claim 17 is a relative term which renders the claim indefinite. The term "same pieces of sub-data" is not defined by the claim, the

specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear what same refers to, i.e., "same" refers to pieces data having the same values.

MPEP 608.01(o) requires that the terms used in the claims be found in the specification so that one of ordinary skill in the art can easily determine the scope of the Applicant's claimed invention. Nowhere does the Applicant use the term "piece" or "pieces" in the specification.

Claims 22, 27 and 32 recite substantially the same previously recited language as in claim 17, above.

Response to Arguments (concerning formalities)

Applicant's arguments filed 11/05/2007 have been fully considered but they are not persuasive.

The Applicant contends, "With respect to the Information Disclosure Statement filed on September 20, 2004, Applicants note that the Examiner has not considered JP 2002-521789. In this regard, Applicants note that page 3 of the IDS filed on September 20, 2004 clearly indicates that JP 2002-521789 corresponds to WO 00/07300 (which published in English)."

The Examiner disagrees and asserts that WO 00/07300 makes no reference to JP 2002-521789 and since the correspondence between the two documents is not clear, the Examiner has not considered JP 2002-521789.

The Applicant contends that claims 18, 23, 28 and 33 are proper dependant.

The Examiner asserts that claims 18, 23, 28 and 33 for failing to provide an additional limitation in the form of a step/action/function further limiting the method claims from which they depend. By definition, a dependant claim is a claim that adds at least one additional limitation. Since claims 18, 23, 28 and 33 fail to do so, claims 18, 23, 28 and 33 are objected to.

The Applicant contends, "With respect to the above-noted feature in claim 17, Applicants note that step S 115 of Fig. 5 and the corresponding description in the specification at page 15, line 19 through page 16, line 10 clearly provides support for such a feature. If the Examiner does not believe that the specification at page 15, line 22 through page 16, line 10 of the specification provides support for the above-noted feature, Applicants kindly request that the Examiner explain why it is believed that such disclosure does not adequately support the above-noted feature."

MPEP 608.01(o) requires that the terms used in the claims be found in the specification so that one of ordinary skill in the art can easily determine the scope of the Applicant's claimed invention. Since the Applicant claims that page 15, line 19 through page 16, line 10 clearly provides support for such a feature, and since the claim language (Claim

1 recites new matter, "An error correction method" ... "comprising: a judgment step of judging whether or not a first piece of data, which is one of a plurality of pieces of data elements of the error correction target code, and a second piece of data, which is one of a plurality of pieces of data of a previous error correction code line, were located between the same pieces of sub data before being deinterleaved") deviates from the language on page 15, line 19 through page 16, line 10, it is up to the Applicant to map the language from the specification to the language in the claim to show that page 15, line 19 through page 16, line 10 do provide support.

The Applicant contends, "MPEP 608.01(o) requires that the terms used in the claims be found in the specification so that one of ordinary skill in the art can easily determine the scope of the Applicant's claimed invention. Since the Applicant claims that page 15, line 19 through page 16, line 10 clearly provides support for such a feature, and since the claim language (Claim 1 recites new matter, "An error correction method" ...

"comprising: a judgment step of judging whether or not a first piece of data, which is one of a plurality of pieces of data elements of the error correction target code, and a second piece of data, which is one of a plurality of pieces of data of a previous error correction code line, were located between the same pieces of sub data before being deinterleaved") deviates from the language on page 15, line 19 through page 16, line 10, it is up to the Applicant to map the language from the specification to the language in the claim to show that page 15, line 19 through page 16, line 10 do provide support since there is no antecedent basis in the specification for the language in question".

MPEP 608.01(o) requires that the terms used in the claims be found in the specification so that one of ordinary skill in the art can easily determine the scope of the Applicant's claimed invention. Since the Applicant claims that page 15, line 19 through page 16, line 10 clearly provides support for such a feature, and since the claim language deviates from the language on page 15, line 19 through page 16, line 10, it is up to the Applicant to map the language from the specification to the language in the claim to show that page 15, line 19 through page 16, line 10 do provide support.

The Applicant contends, "For example, in the specification, Applicants note that reference is made to "sub-data A" and "sub-data B" as shown in Fig. 4(b). Applicants respectfully submit that one of ordinary skill in the art would clearly understand, based on this description, as well as the remaining description in the specification, that "sub-data A" and "sub-data B", for example, are both considered to be a piece of sub-data, and that the phrase "a plurality of pieces of sub-data" thus merely refers to more than one piece of such data, and does not in any way whatsoever refer to an individual piece of sub-data being divided into smaller pieces".

MPEP 608.01(o) requires that the terms used in the claims be found in the specification so that one of ordinary skill in the art can easily determine the scope of the Applicant's claimed invention. Nowhere does the Applicant use the term "piece" or "pieces" in the specification.

The Applicant contends, "MPEP 608.01(o) requires that the terms used in the claims be found in the specification so that one of ordinary skill in the art can easily determine the scope of the Applicant's claimed invention. Nowhere does the Applicant use the term "piece" or "pieces" in the specification".

The Examiner asserts MPEP 608.01(o) defines the threshold as not requiring undue experimentation to determine the scope of the claims. The Applicant, as pointed out above, has not satisfied that requirement.

Response to Arguments (concerning Prior Art)

Applicant's arguments filed 11/05/2007 have been fully considered but they are not persuasive.

As a preliminary matter, the Examiner clarifies the Prior Art rejection of claim 1: Marchant teaches an error correction method using a plurality of pieces of sub data which comprise error correction codes that are independent from error correction codes of an error correction target code line to configure erasure position information (col. 3, lines 30-59 in Marchant teaches using a plurality of pieces of inner/row codeword sub data which comprise error correction codes that are independent from error correction codes of an outer/column error correction target code line to configure erasure position information; Note: col. 3, lines 41-57 in Marchant teaches that inner/row codeword sub data of the product code is used to configure erasure position information), said method comprising: judging whether or not a first piece of data, which is one of a plurality of

pieces of data of the error correction target code line, and a second piece of data, which is one of a plurality of pieces of data of a previous error correction code line, were located between the same pieces of sub data before being deinterleaved (col. 6, lines 28-56 in Marchant teach judging whether or not a first piece of data 48b in inner/row codeword sub data row 3 of Figure 7, which is one of a plurality of pieces of data of the outer/column error correction target code line 44b, and a second piece of data 48a in inner/row codeword sub data row 3, which is one of a plurality of pieces of data of a previous error correction code line 44a, were located between the same pieces of inner/row codeword sub data rows 2 to 4 before being deinterleaving); configuring erasure position information of said first piece of data belonging to the error correction target code line to be the same as identical to erasure position information of said second piece of data belonging to the previous error correction code line when said judgment step judging judges that the first piece of data and the second piece of data are both located between the same pieces of sub data (col. 6, lines 28-56 in Marchant teach that symbols in a scratch field are configured/flagged with erasure information for a scratch so that they are configured/flagged with erasure position information for the same scratch, in particular; this process is a step for configuring/flagging erasure position information of said first piece of data 48b belonging to the outer/column error correction target code line 44b to be the same as identical row position 3 to erasure position information of said second piece of data 48a belonging to the previous error correction code line 44a when said judgment step judging judges that the first piece of data 48b and the second piece of data 48a are both located between the same pieces

of inner/row codeword sub data rows 2 to 4); and performing error correction on the error correction target code line (col. 6, lines 28-56 in Marchant).

The Applicant contends, "Claim 17 recites the feature of configuring erasure position information of said first piece of data belonging to the error correction target code line to be identical to erasure position information of said second piece of data belonging to the previous error correction code line when said judging judges that the first piece of data and the second piece of data are both located between the same pieces of sub data. Applicants respectfully submit that Marchant does not disclose or suggest at least this feature of claim 1".

The Examiner disagrees and asserts that col. 6, lines 28-56 and Figure 7 in Marchant teaches that symbols in a scratch field are configured/flagged with erasure information for a scratch so that they are configured/flagged with erasure position information for the same scratch. That is, Marchant teaches configuring/flagging erasure position information of said first piece of data 48b in Figure 7 belonging to the outer/column error correction target code line 44b to be the same as identical row position 3 to erasure position information of said second piece of data 48a belonging to the previous error correction code line 44a when said judgment step judging judges that the first piece of data 48b and the second piece of data 48a are both located between the same pieces of inner/row codeword sub data rows 2 to 4.

The Applicant contends, "Applicants respectfully submit that if the cross interleaved codes described in U.S. Patent No. 5,581,794 were applied to Marchant, it would not be possible to determine the correct position where a scratch has occurred".

The Examiner disagrees and asserts col. 6, lines 28-56 in Marchant explicitly teaches detecting scratches and flagging scratches for erasure correction. Note: an erasure is an error at a known location.

The Examiner disagrees with the applicant and maintains all rejections of claims 17-40. All amendments and arguments by the applicant have been considered. It is the Examiner's conclusion that claims 17-40 are not patentably distinct or non-obvious over the prior art of record in view of the references, as applied in the last office action, filed 05/04/2007. Therefore, the rejection is maintained.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 17-20, 22-25, 27-30, 32-35 and 37-40 are rejected under 35

U.S.C. 102(e) as being anticipated by Marchant; Alan B. (US 6631492 B2).

35 U.S.C. 102(e) rejection of claims 17, 22, 27 and 32.

Marchant teaches an error correction method using a plurality of pieces of sub data which comprise error correction codes that are independent from error correction codes of an error correction target code line to configure erasure position information (col. 3, lines 30-59 in Marchant teaches using a plurality of pieces of inner/row codeword sub data which comprise error correction codes that are independent from error correction codes of an outer/column error correction target code line to configure erasure position information; Note: col. 3, lines 41-57 in Marchant teaches that inner/row codeword sub data of the product code is used to configure erasure position information), said method comprising: judging whether or not a first piece of data, which is one of a plurality of pieces of data of the error correction target code line, and a second piece of data, which is one of a plurality of pieces of data of a previous error correction code line, were located between the same pieces of sub data before being deinterleaved (col. 6, lines 28-56 in Marchant teach judging whether or not a first piece of data 48b in inner/row codeword sub data row 3 of Figure 7, which is one of a plurality of pieces of data of the outer/column error correction target code line 44b, and a second piece of data 48a in inner/row codeword sub data row 3, which is one of a plurality of pieces of data of a previous error correction code line 44a, were located between the same pieces of inner/row codeword sub data rows 2 to 4 before being deinterleaving); configuring erasure position information of said first piece of data belonging to the error correction target code line to be the same as identical to erasure position information of said

second piece of data belonging to the previous error correction code line when said judgment step judging judges that the first piece of data and the second piece of data are both located between the same pieces of sub data (col. 6, lines 28-56 in Marchant teach that symbols in a scratch field are configured/flagged with erasure information for a scratch so that they are configured/flagged with erasure position information for the same scratch, in particular; this process is a step for configuring/flagging erasure position information of said first piece of data 48b belonging to the outer/column error correction target code line 44b to be the same as identical row position 3 to erasure position information of said second piece of data 48a belonging to the previous error correction code line 44a when said judgment step judging judges that the first piece of data 48b and the second piece of data 48a are both located between the same pieces of inner/row codeword sub data rows 2 to 4); and performing error correction on the error correction target code line (col. 6, lines 28-56 in Marchant).

Note: col. 6, lines 28-56 in Marchant teach that scratch detection is performed prior to ECC. Col. 4, lines 41-60 in Marchant teach cross interleaved codes such as in U.S. Pat. No. 5,841,794 and Figure 3B teaches that de-interleaving for cross interleaved codes takes place after inner code decoding, that is, after ECC correction starts, hence; Marchant teaches an embodiment where scratch detection takes place before de-interleaving on read Cross-interleaved ECC encoded data.

As per claim 22, only data in the scratch region of Figure 7 are subjected to erasure error detection. Other ECC codewords not lying in the scratch region are ECC decoded.

As per claim 27, claim 27 recites an apparatus with the same limitations as in claim 17.

As per claim 32, claim 32 recites an apparatus with the same limitations as in claim 22.

35 U.S.C. 102(e) rejection of claims 18, 23, 28 and 33.

Col. 6, lines 28-56 in Marchant teach judging whether or not a first piece of data in row 4 in Figure 7, which is one of a plurality of pieces of data elements in row 4 of the error correction target code, and a second piece of data in row 2, which is one of a plurality of pieces of data in row 4 of a previous error correction code line, were located between the plural pieces of sub data 48a and 48b before being deinterleaved.

35 U.S.C. 102(e) rejection of claims 19, 24, 29 and 34.

Sub data 48a and 48b in Figure 7 of Marchant is sync data for configuring/flagging erasures.

35 U.S.C. 102(e) rejection of claims 20, 25, 30 and 35.

If first data is outside of sub data 48a and 48b in Figure 7 of Marchant.

35 U.S.C. 102(e) rejection of claims 37-40.

Sub data 48a and 48b in Figure 7 of Marchant is sync data for configuring/flagging erasures.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 21, 26, 31 and 36 rejected under 35 U.S.C. 103(a) as being unpatentable over Marchant; Alan B. (US 6631492 B2) in view of Eachus; Joseph J. (US 3685016 A).

35 U.S.C. 103(a) rejection of claims 21, 26, 31 and 36.

Marchant substantially teaches the claimed invention described in claims 17-20, 22-25, 27-30 and 32-35 (as rejected above).

However Marchant does not explicitly teach the specific use of avoiding error correction when error correction capabilities are exceeded.

Eachus, in an analogous art, teaches use of avoiding error correction when error correction capabilities are exceeded (col. 13, lines 1-10 in Eachus).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Marchant with the teachings of Eachus by including use of avoiding error correction when error correction capabilities are exceeded. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of avoiding error correction when error correction capabilities are exceeded would have provided means for avoiding meaningless calculations (col. 13, lines 1-10 in Eachus).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

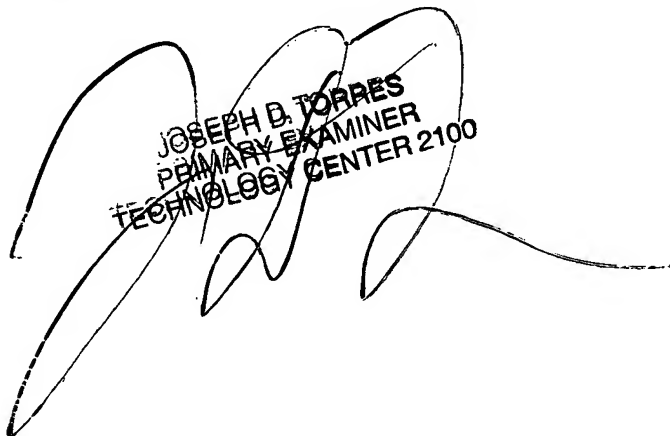
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Art Unit 2112